Medium_EnglishPassage_2029
Modernization of Indian Railways

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The Indian Railways network, which serves as the fundamental circulatory system of the national economy, is currently undergoing its most ambitious modernization phase since its inception in 1853. Operating a massive network of over 68,000 route kilometers, it transports approximately 23 million passengers and 3 million tonnes of essential freight on a daily basis. For many decades, the system suffered from chronic under-investment, leading to aging tracks, outdated signaling infrastructure, and dangerously overcrowded passenger coaches. However, the government's recent capital expenditure budgets—specifically the record-breaking allocation of 2.40 lakh crore in the 2023-24 financial year—have injected new life into this gigantic organization. The most visible symbol of this rapid transformation is the successful introduction of the 'Vande Bharat Express' trains. These indigenous, semi-high-speed trainsets are capable of reaching a maximum speed of 160 km/hr; they feature modern amenities such as automatic sliding doors, bio-vacuum toilets, and onboard Wi-Fi services. Unlike traditional trains that require a separate locomotive engine, the Vande Bharat uses a distributed traction power system, allowing for much faster acceleration and deceleration. This innovative design significantly reduces the overall travel time between major metropolitan cities. Furthermore, the railway ministry is heavily focused on achieving 100% route electrification. By transitioning from highly polluting diesel locomotives to clean electric traction, the railways will not only save billions of dollars in annual fuel import bills but also reduce its carbon footprint by nearly 60%. Another major infrastructure project currently under construction is the Dedicated Freight Corridor (DFC). In the past, slow-moving goods trains had to share the same tracks with fast-moving passenger trains; this mixed-traffic operation caused massive delays in the delivery of industrial raw materials. The DFC is a separate, fully electrified double-line network designed exclusively for freight trains running at speeds of up to 100 km/hr. Once fully operational, this corridor will drastically reduce logistics costs, thereby making Indian exports much more competitive in the global market. Passenger safety has also been upgraded through the deployment of an indigenous automatic train protection system known as 'Kavach'. This highly advanced technology uses radio frequency identification (RFID) tags and GPS data to automatically apply the brakes if two trains are detected running on the same track, effectively eliminating the risk of catastrophic head-on collisions. Additionally, hundreds of major railway stations are being completely redeveloped under the 'Amrit Bharat Station Scheme' to provide airport-like facilities: modern waiting lounges,

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escalators, and dedicated retail spaces. Despite these remarkable technological upgrades, the administration must ensure that the basic travel needs of the lower-income demographic are not neglected. The general unreserved coaches, which carry the poorest sections of society, still suffer from terrible overcrowding and poor sanitation. Balancing the creation of premium, high-speed services with the provision of affordable, safe transport for the common citizen is the ultimate administrative challenge. The ongoing modernization drive will undoubtedly secure a highly efficient, sustainable, and profitable future for the national transporter.

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